

## **REMARKS**

In the outstanding Office Action, the Examiner rejected claims 1, 3, 4, 6, 8-18, 20-24, 26-30, 32, 34-44, 46-50, 52-55, 57, 58, 60-72, 74-78, 80-84, 86, 88-98, 100-104, 106-109, 111, 112, 114, 116-126, 128-132, 134-138, 140, 142-152, 154-158, and 160-174. In addition, the Examiner withdrew claims 2, 5, 7, 19, 31, 33, 45, 56, 61, 73, 85, 87, 99, 110, 113, 115, 127, 139, 141, and 153 from further consideration. The Examiner also objected to the drawings.

By this amendment, Applicant cancels claims 2, 5, 7, 10, 11, 15, 16, 19, 21, 31, 33, 35-38, 41-43, 45, 56, 61, 64, 65, 69, 70, 73, 75, 85, 87, 89-92, 95-97, 99, 110, 113, 115, 118, 119, 123, 124, 127, 129, 139, 141, 143-146, 149-151, 153, and 163-174, without prejudice or disclaimer. Applicant also amends claims 1, 17, 29-30, 39, 40, 44, 55, 71, 83-84, 93-94, 98, 109, 125, 137-138, 147-148, and 152. With entry of this amendment, claims 1, 3, 4, 6, 8-9, 12-14, 17-18, 20, 22-24, 26-30, 32, 34, 39-40, 44, 46-50, 52, 53, 55, 57, 58, 60, 62-63, 66-68, 71-72, 74, 76-78, 80-84, 86, 88, 93-94, 98, 100-104, 106-109, 111, 112, 114, 116-117, 120-122, 125-126, 128, 130-132, 134-138, 140, 142, 147-148, 152, 154-158, and 160-162 are pending and under consideration.

Claim 53 was not included in the listing of pending claims in the previous Office Action. This appears to be an error since Applicant did not cancel this claim nor did the Examiner withdraw it from consideration.

### **Objections to the drawings**

The Examiner objected to the drawings and indicated that the positive lens group and the negative lens group must be shown in the drawings or the feature canceled

from the claims. Office Action at page 2. In accordance with the Examiner's suggestion, Applicant cancels the feature from the claims. Accordingly, Applicant respectfully asserts that the drawings are in proper form.

### **Rejection under 35 U.S.C. § 112**

The Examiner rejected multiple claims under Section 112, paragraphs 1 and 2. In short, the rejections centered around the claim recitations "positive lens group" and "negative lens group." Applicant has canceled all such claim recitations. Thus, Applicant asserts that the rejection under Section 112, paragraphs 1 and 2 is rendered moot.

### **Rejections under 35 U.S.C. § 103**

The Examiner rejected claims 1, 6, 8-9, 20-21, 55, 57-58, 60, 62-63, 74-75, 109, 111-112, 114, 116-117, 128-129, 137-138, 140, 142-143, and 154-155 under 35 U.S.C. § 103(a) as allegedly unpatentable over U.S. Patent No. 6,243,350 to Knight et al. ("Knight") in view of U.S. Patent No. 4,504,616 to Uehara et al. ("Uehara"). Office Action at pages 4-8. In addition, the Examiner rejected claims 3-4, 29-30, 32, 34-35, 46-47, 83-84, 86, 88-89, and 100-101 under 35 U.S.C. § 103(a) as allegedly unpatentable over Knight and Uehara and further in view of U.S. Patent No. 6,621,787 to Lee et al. ("Lee"). Applicant respectfully traverses these rejections.

#### **Claims 1, 55, and 109:**

Independent claims 1, 55, and 109 recite, in part, "wherein the converging optical system has an optical element having a diffractive surface provided with a ring-shaped

diffractive structure.” In the rejection of claim 21, the Examiner stated that this element is taught in Knight at column 9, lines 10 to 27. See, Office Action, item 12. at page 6. However, Applicant asserts that Knight does not teach this element.

Knight, at col. 9, lines 10-27, merely teaches a theoretical limit on the resolution of an optical system, known as a diffraction limit. In other words, Knight teaches that its optical focusing system is limited by a well-known principle of physics that has no corresponding physical structure. That is very different from the element recited above. In fact, there is no teaching or suggestion in Knight regarding “an optical element having a diffractive surface provided with a ring-shaped diffractive structure.” None of the other cited references cure this deficiency. Thus, for at least the above reason, Applicant respectfully asserts that claims 1, 55, and 109 are patentable over the cited art.

Claims 3, 4, 6, 8-9, 12-14, 17-18, 20, 22-24, and 26-28 all depend, either directly or indirectly, from claim 1. Claims 57, 58, 60, 62-63, 66-68, 71-72, 74, 76-78, and 80-82 all depend, either directly or indirectly, from claim 55. Claims 111, 112, 114, 116-117, 120-122, 125-126, 128, 130-132, and 134-136 all depend, either directly or indirectly, from claim 109. Thus, for at least the reasons discussed above, Applicant respectfully asserts that these claims are allowable over the cited art as well.

Claims 29, 83, and 137:

Independent claims 29, 83, and 137 recite, in part, “wherein the converging optical system comprises a positive lens having a positive refractive power and a negative lens having a negative refracting power and wherein at least one of the positive lens and the negative lens has a negative refracting power, and wherein the following formula is satisfied:  $vdP > vdN$  where  $vdP$  is an Abbe’s number of d-line of the

positive lens and vdN is an Abbe's number of d-line of the negative lens." Nowhere does Knight teach or suggest this structural element. At best, of the cited art, U.S. Patent No. 6,091,549 to McDonald et al. ("McDonald") seems to disclose an optical system that includes a lens pair corresponding to a positive lens and a negative lens. However, McDonald does not teach or suggest a relationship between the two lenses such that one lens has an Abbe's number that is different from the other lens. Indeed, none of the other cited art teaches or suggests this either. Thus, for at least the above reason, Applicant respectfully asserts that claims 29, 83, and 137 are patentable over the cited art.

Claims 30, 32, 34, 39-40, 44, 46-50, 52, and 53 all depend, either directly or indirectly, from claim 29. Claims 84, 86, 88, 93-94, 98, 100-104, and 106-108 all depend, either directly or indirectly, from claim 83. Claims 138, 140, 142, 147-148, 152, 154-158, and 160-162 all depend, either directly or indirectly, from claim 137. Thus, for at least the reasons discussed above, Applicant respectfully asserts that these claims are allowable over the cited art as well.


Applicant respectfully requests reconsideration and reexamination of this application and the timely allowance of the pending claims.

Please grant any extension of time required to enter this response and charge any additional required fees to Deposit Account 06-0916.

Respectfully submitted,

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Dated: October 11, 2005

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Elizabeth Nesbitt